REMARKS

The Office action dated April 12, 2006, has been carefully reviewed and the foregoing amendment has been made in response thereto.

The Office action states that the definition of "NVH" provided in the response dated February 7, 2006, is new matter. That definition has been cancelled from Paragraph [0003] by this response. Applicant is providing with this response support for the definition taken from "Automotive Technology", Second Edition, wherein, on page 1268 of its English Language Glossary, NVH is defined as an abbreviation for noise, vibration, and harshness. The term is well known in the automotive industry.

Claim 7 stands objected to. Claim 7 canceled with this response, thereby overcoming the basis for the objection.

Claims 1-2, 4-7, and 13 stand rejected under 35 USC 112, first paragraph. Claim 1 has been amended by: (1) removing "uncoated" and "automotive vehicle" from the curing step, (2) deleting "of the vehicle" from the running step, (3) adding "the highest" and "while running the engine" to the locating step, and (4) restoring "the coating providing the vibration damping layer" to the spraying step. The specification supports the recitation of "exhaust system" at paragraphs [0014] and [0015]. These changes to Claim 1 overcome the bases for the rejected under 35 USC 112, first paragraph.

Claim 4 has been amended by inserting "atomic percent Si". Support for this amendment to Claim 4 is found in Fig. 2. The scales for percent and atomic percent are substantially identical in Fig. 2.

Claims 1-2, 4-7, and 13 stand rejected under 35 USC 112, second paragraph. In Claim 1, line 6 "high" has been replaced with "the highest". Support for this can be found in the specification, paragraph [0027] on page 8, line 3. Fig. 3 depicts the results of a laser vibration scan test of an exhaust system and provides a scale of vibration from lowest to highest. Fig. 4 depicts the results of a sound pressure mapping test of the exhaust system and provides a graduated scale of the noise levels.

The scale of Figure 3 supports the term "highest" in Claim 1 without vagueness or indefiniteness. In Claim 1 a locating step has been amended as suggested by the Office action by inserting "while running the engine."

In Claim 1, the phrase "the coating providing the vibration adapting layer" has been reinserted in the claim, thereby providing reference to the preamble.

Claims 1-2, 4-7, and 13 stand rejected under 35 U.S.C. 103(a) as unpatentable over the admitted state of the prior art in view of Smith (US Patent 2,355,568), Hartsock et al. (US Patent 5,530,213), Masumoto et al. (US Patent 4,859,252), Kim (US Patent 6,206,459), and Cremers et al. (US Patent Document 2002/0035456). The Office action says that the admitted state of the prior art teaches all the features of the rejected claims except (1) locating the regions of the heat shield having high vibrations, (2) composition of the Al-Si alloy, (3) the stainless steel heat shield of Claim 6, (4) securing the heat shield to a catalytic converter in the exhaust system of an automotive vehicle and running the engine of the vehicle and locating the regions, and (5) that the locating step includes identifying the regions with a laser vibration scan or sound pressure recording.

In making this rejection the Office action five times cites Kim and Cremers for their disclosing computer aided engineer techniques, yet the term "computed aided engineering" appears no where in the claims presented for prosecution. Kim describes and claims a structural reinforcement that increases the strength of a component in order to reduce road noise in the passenger compartment of a motor vehicle. Various reinforcements to the original structure were added to increase the strength of a wheel cover, both locally and over a larger area of the cover. Kim apparently employs computer aided engineering in the form of a structural mathematical model of the cover to determine the locations where reinforcement is desirable. Kim states that as a result of normal mode analysis of the wheel housing cover, wheel housing and inner panel of a conventional rear wheel housing it has been found that the vibration level of the wheel housing panel is increased over various ranges of frequencies, not vehicle speed. Kim is concerned with the frequency of the noise and resonances that the noise produces within the vehicle body. In order to solve this problem, Kim developed local

reinforcements that increased the strength of the subject structure. Kim discloses nothing about spray coating. Instead Kim added structural members, shown in Figs. 4-8, to increase the strength of the original assembly. Kim neither discloses nor suggests securing a heat shield to a catalytic converter in an exhaust system of an automotive vehicle engine, running the engine, or locating the regions of a heat shield were the highest levels of vibration occur while running the engine. Kim does not mention any interest in high levels of vibration. Kim is concerned with exciting resonant frequencies of the structure. Kim changes the resonant frequencies by strengthening the structure. Kim says that in order to reduce road noise, an increase of strength of a chassis mounting unit such as a suspension, sub-frame, rear cross-member, and the like is required. Kim attempts to attenuate noise levels within the vehicle by stiffening a component. The method of claim makes no attempt to stiffen the component; instead it applies a thermal coating to the areas of highest vibrations.

The Office Action states that Kim refers to vibration due to load input into the vehicle body while the body is running, and cites Column 1, lines 10-50 as supporting this conclusion. No where in the cited text does the Kim patent states that a vehicle body receives load input from a road surface via a suspension system while a vehicle is running. Kim describes booming frequencies ranges between 200 Hz and 400 Hz, and determines from a mathematical model of the structure the vibration response. Kim does not disclose determining the vibration levels and measuring vibrations of the actual structure while it is operating. Instead, Kim applies computer aided engineering techniques to a mathematical model, and excites the model in various frequency ranges.

Cremers refers in its Paragraph [0006] to a computer aided engineering process for evaluating and optimizing the acoustic performance of structures. The process include the ability to predict acoustic radiation pattern from a vibrating structure using computed or measured surface vibration and the ability to recover surface vibration onto a vibrating structure from measured field to sound pressure level. Cremers does not discuss the technique of securing a structure another component, such as the exhaust system of an automotive vehicle engine, operating the

engine, and determining locations of highest vibration. Cremers is silent as to applying a thermal coating to those located regions.

The steps of Claim 1 are neither taught nor suggested by the cited prior art references or any combination that would result from them.

In view to the amendments to the claims and the remarks, the claims presented for prosecution, Claims 1-2, 4-7, and 13, appear now in condition for allowance.

Respectfully submitted,

Frank G. McKenzie
Attorney for Applicant(s)
Reg. No. 29,242

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MacMillan, Sobanski & Todd, LLC
One Maritime Plaza, Fifth Floor
720 Water Street
Toledo, Ohio 43604
(734) 542-0900
(734) 542-9569 (fax)